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The efficacy of affirmations on anxiety reduction

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THE EFFICACY OF AFFIRMATIONS ON ANXIETY REDUCTION

by

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ABSTRACT

Anxiety disorders are among the most prevalent forms of mental illness. There is a great need to acquire techniques which effectively and rapidly treat anxiety. The purpose of this study was to determine if the use of affirmations aids in the reduction of anxiety. In addition, this study examined if the use of affirmations combined with relaxation music aids in the reduction of anxiety and examined if the use of relaxation music alone aids in the reduction of anxiety.

An experimental research design was used in this study. Three treatment groups were investigated and one control group. Each treatment group received a ten minute audio tape of either affirmations statements played alone (without relaxation music), affirmations statements played with relaxation music, or a ten minute audio tape of relaxation music alone. The control group was instructed to sit and wait for ten minutes. The Beck Anxiety Inventory was utilized to obtain anxiety scores. Pre and posttests were administered to determine the extent to which the treatment reduced the anxiety scores. A two-way analysis of variance (ANOVA) with repeated measures was deemed suitable for these data.

There were modest reductions in anxiety scores among the affirmations groups (alone and with music) and the control group. The music only group dropped the most

in anxiety and appears to be the treatment of choice when considering a non-invasive, easily accessible and effective treatment for anxiety. Recommendations were made for future research and implications for educators and counselors were discussed.

This work is dedicated to both my fathers, who art in Heaven.

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This would not have been possible without the care and devoted leadership of the following people. I will always remember Dr. Mike Robinson for his providence. It is because of him that I started this. It is because of him that I have finished this.

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CHAPTER ONE: INTRODUCTION

Anxiety disorders are among the most prevalent forms of mental illness in the United States (Seligman, 1998). Phobias, the most commonly reported anxiety disorders, are cited as the primary symptom in 20 to 25 percent of all psychiatric disorders (Looker & Gregson, 1989). In addition, stress related to anxiety is a significant factor in patients seeking medical attention for physical symptoms (Powell & Ernright, 1990). With such a prevailing illness, efficacious treatments are needed. Cognitive Behavioral models of counseling are known to be effective in the treatment of anxiety (Seligman, 1998). Two popular cognitive behavioral models are the use of affirmations and music therapy for the relief of anxiety (Beck & Emery, 1985; Hansar, 1985; Mahoney & Thorensen, 1974; Meichenbaum, 1976; Maslar, 1986; Standley, 1986). Music therapy has been established as a well known effective treatment for anxiety (Ballard, 1981; Candler, 1978; Kooyman, 1988; Landreth & Landreth, 1974; Scartelli, 1989; Thaut, 1989). However, little is known about the effects of affirmations on the reduction of anxiety.

Many clinicians, researchers and educators report having much success with the use of affirmations and guided imagery which can help elevate mood, increase immune functioning, reduce pain, and lower symptoms of depression. Research that endorses these statements has been conducted in clinical trials at many medical facilities including UC Davis Medical Center, Memorial Sloane-Kettering, The Cleveland Clinic, Kaiser Permanente, University Hospitals of Cleveland and Canyon Ranch Health Spa

(Naperstek, 1999). Research indicates the use of affirmations as a low-cost, non-invasive therapeutic tool that promotes positive change. However, little empirical evidence exists to support this claim.

Additionally, music therapy proves to be as effective in reducing anxiety and promoting relaxation similar to the alleged effects of affirmations. There is an extensive outcome research base on music therapy in the medical sciences in respect to anxiety and pain management (Rasco, 1992; Rickert, Kozlowski, Warren, Hendon, & Davis, 1994; Cunningham, Monson & Bookbinder, 1997; Ballard, 1981; Candler, 1978; Kooyman, 1988; Landreth & Landreth, 1974; Thaut, 1989). Music therapy also proves to have substantial positive effects when applied for the pain and anxiety experienced with a medical illness or during hospitalization (Standley, 1986; Maslar, 1986; Hansar, 1985). Recently, the effects of music on anxiety have been researched during pre-surgery (Heiser et al, 1997; Heitz, Symreng and Scamman, 1992; Locsin, 1981; Zimmerman et al, 1996) in intensive care (Updike, 1990); and during painful procedures (Rasco, 1992; Rickert et al., 1994). Cunningham, Monson and Bookbinder (1997) found using music therapy alone can be effective in reducing anxiety and pain. Background relaxation music generally accompanies affirmations audio tapes. Considering the relaxation music is already empirically supported as having a strong relaxing effect, is it possible the affirmations may take away from the music's potency? Another consideration is that by adding the affirmations, is this strengthening the relaxation effect and how relaxing are the affirmations without the music accompaniment? This study is interested in isolating

the effects of music and affirmations to determine the effect of the affirmations alone, without the benefit of the already empirically supported relaxation music.

The effects of affirmations on anxiety reduction is the focus of this study. By examining the role affirmations play with relaxation music in reducing anxiety, this study would contribute to the existing research on mind, body, and spiritual approaches in counseling. This study also intends to clarify the unique effects of relaxation music, affirmations alone, and when these two are combined, on anxiety as measured by the Beck Anxiety Inventory (BAI). Little is known about the effect of affirmations on anxiety reduction. The results of this study would help clarify if the use of affirmations is a front line treatment of anxiety or whether there may be other treatments of choice when considering treating anxiety.

With the existence of a strong research base providing evidence that test anxiety has a negative effect on performance (Calvo, Eysenck, Ramos, & Jimenez, 1994; Hembree, 1988; Kivimaki, 1995, Seipp, 1991), it is not the intent of this study to investigate the effects of anxiety on achievement or test scores. Test anxiety is defined as a state of fear or arousal, physiologically, emotionally or cognitively, during situations where an individual will be evaluated (Liebert & Morris, 1967). These same emotional, physiological and cognitive disturbances are present in general anxious states, not unique to test anxiety. Therefore, general anxiety is assumed to also be present and will be measured with the Beck Anxiety Inventory for the purpose of looking at general anxiety during this study rather than test anxiety. However, if the treatment proves to be

effective in reducing anxiety, this may be beneficial to the student experiencing anxiety before an exam or any evaluative situation, since it is a non-invasive procedure that is easily carried out in the classroom with little disruption.

Rationale of the Study

Because anxiety disorders are among the most prevalent forms of mental illness, and stress related to anxiety is a significant factor in patients seeking medical attention, there is a great need to seek out therapies which effectively and rapidly treat anxiety. In an article about the rise in anxiety due to recent terrorism acts in the U.S., researchers Miller and Ferris (2001) report that many people are having difficulty with sleep and concentration, feel anxious about various activities, including entering tall buildings, shopping, traveling, and opening mail. Some are increasingly resorting to anti-anxiety drugs, and the demand for these medications has risen sharply in New York and Washington. According to NDC Health (2001), which collects data for the health care industry, the number of new prescriptions for Alprazolam (the generic version of Xanax) was 22% greater in New York and 12% greater in Washington during the week ending September 28, compared to a year earlier. Nationally, these prescriptions were up 6.3%. Prescriptions for Diazepam (the generic version of Valium) increased 14% in Washington and 8% in New York, compared to the same week last year. Nationally, the increase was 3%. Whether or not this rise in anxiety continues, it is clear from past research that anxiety is prevalent in our society.

Because of the prevalence of anxiety many models of treatment exist. Research shows cognitive behavioral models are effective in treating anxiety (Beck & Emery, 1985; Meichenbaum, 1976; Mahoney & Thorensen, 1974). Affirmations fall under the umbrella of cognitive behavioral therapy and were first referred to as conscious autosuggestion, in 1920 by French Psychologist Emile Coué. Not until the early 1960's did the use of affirmations appear in the literature in the United States. The then emerging Cognitive Behavioral Model introduced these internal dialogues. Aaron Beck, Albert Ellis, Donald Meichenbaum and others indicated that self-statements influence peoples' behaviors and attitudes (Beck, 1967; Ellis, 1973; Meichenbaum; 1976). Recent researchers are concluding from the earliest works in the Cognitive Behavioral field that thoughts influence behavior, and modifying these thoughts may lead to positive change and modified behaviors (Cash & Copeland, 1996; Jones, 1985; and Davis, 1994). This study questions whether the positive change is limited to cognitive restructuring or in fact does include relaxation as effectively as other treatments such as listening to relaxation music alone.

Cash (1997) promotes the use of affirmations as a component of a behavioral self-help design. Other researchers and clinicians report successful use of affirmations with clients treated for a range of disorders including depression, anorexia nervosa, bulimia, irrational negative body image problems as well as many physical, psychological and spiritual difficulties (Altenberg, 1992; Cash, 1997; Copeland, 1996; Jones, 1985). Similarly, many hypnotherapists describe using affirmations with clients leading to

favorable outcomes. Davis (1994) reports using hypnosis and positive affirmations successfully. Salka (1997) follows the Ericksonian hypnosis theory and is an advocate of this technique she refers to as "powerful".

Although many clinicians report using this technique, there is a deficit in the empirical evidence supporting this claim. Few empirical studies were found that address the use of affirmations. These studies had faults that discounted their findings. The studies were either poorly designed, lacking in theoretical identification or lacking valid instrumentation. Much more remains to be empirically studied regarding the effects of affirmations. Clinicians endorse these as low-cost, simple therapeutic tool that seems to be taking hold in the counseling field. In addition, more broadly, the mind, body, spirit movement in counseling is becoming more widely practiced in mainstream counseling. Unfortunately, these alternative techniques such as, aroma-therapy, therapeutic touch, rebirthing and other alternative styles of therapy are being introduced and practiced without much empirical support regarding their effectiveness. Affirmations is one of these techniques. Although many clinicians report affirmations as an effective treatment, research is needed to validate this endorsement. Furthermore, many of the affirmations audio tapes used by these clinicians are accompanied by relaxation music played in the background. Because music therapy has been established as an effective technique in anxiety reduction, the efficacy of affirmations without the benefit of the relaxation music requires investigation. Considering the music has already been empirically proven to be an effective anxiety reducing technique, of what benefit are the additional affirmations,

and how much of a benefit do they hold when used alone, without the music. These are important questions to explore in order to understand the effectiveness of these tools and to most efficiently apply them in treatment. Because anxiety disorders are among the most prevalent forms of mental illness, and stress related to anxiety is a significant factor in patients seeking medical attention, there is a great need to seek out therapies which effectively and rapidly treat anxiety.

The findings of this study could be useful in a counseling setting allowing a therapist to design a treatment plan that included the use of affirmations if they prove to be the treatment of choice for anxiety. If the affirmations are effective without the additional music, this would be an important and useful finding due to the fact that they can be utilized where music playing is unsuitable and inconvenient. Due to the non-invasive nature of affirmations, they could be an important therapeutic tool that can be implemented most anywhere. This may be an important finding due to the pervasiveness of anxiety and the need for effective and easily accessed treatments. For example, affirmations could also be implemented in a school setting before testing or any anxiety producing situation to help lower anxiety which is known to increase the likelihood of improved performance. This can also benefit the educator by helping the students lower their anxiety, test better and therefore achieve higher scores. This may not only affect the students learning and confidence, but also the important evaluations of the professor by the students and the overall assessment of the schools as indicated by the academic achievement of the students.

Statement of the Problem

The purpose of this study was to determine if the use of affirmations aids in the reduction of anxiety. In addition, this study determined if the use of affirmations combined with relaxation music aids in the reduction of anxiety and determined if the use of relaxation music alone aids in the reduction of anxiety. This study investigated the following question: Is there a difference in the level of self-reported anxiety among individuals who experience an audio tape of affirmations compared to experiencing an audio tape of affirmations combined with relaxation music, compared to experiencing an audio tape of relaxation music alone, to those that do not?

In this study, four group conditions were compared:

1. Experience of 10 minutes of an audio tape of affirmations.
2. Experience of 10 minutes of an audio tape of affirmations combined with relaxation music.
3. Experience of 10 minutes of an audio tape of relaxation music.
4. Control, or no treatment group.

With this in mind, the following hypothesis is asserted: No statistically significant difference exists among the four group affirmations conditions with respect to reduction in mean anxiety scores.

Clarification of the Problem Statement

Definitions of Terms

Affirmations: Affirmations are defined as unconditional positive statements that influence the view of the persons sense of self in a positive direction. They are designed for repeated listening or as repeated self-statements to combat negative thinking and serve as a way of re-programming the unconscious mind (Naperstack, 1999).

Affirmations with relaxation music: Affirmations are defined as unconditional positive statements that influence the view of the persons sense of self in a positive direction combined with a succession of simple tones with a rhythmic structure forming a melody that is agreeable to the ear which relaxes, calms and elevates mood (Naperstack, 1999; Hall, 1982).

Anxiety: Anxiety is operationally defined by using the Beck Anxiety Inventory(BAI) (Beck, 1967). Additional information on the BAI is available in the Methodology section and in the Appendix.

Cognitive-Behavior Therapy: Therapy which promotes behavior change through the restructuring of conscious thoughts and beliefs (Meichenbaum, 1977).

Guided Imagery: Visualization or mental imagery and thought process involving the whole body including all of the senses and emotions which serves as a way of relaxing, distracting oneself from intrusive thoughts, promotes self-development and healing (Naperstack, 1994).

Music Therapy: The prescribed, structured use of music or music activities under the direction of specially trained personnel to influence changes in behavior patterns, thereby helping clients achieve therapeutic goals. (Peters, 1987).

Relaxation Music: A succession of simple tones with a rhythmic structure forming a melody that is agreeable to the ear which relaxes, calms and elevates mood (Hall, 1982).

Limitations

The study will be limited by the following:

1. The degree to which members of the experimental group complied with recommended procedures regarding listening to and repeating the positive affirmation statements during the treatment.
2. The subjects' degree of honesty in their responses on the Beck Anxiety Inventory.
3. The subjects who will partake in the study will be experiencing testing anxiety only.
4. The subjects will be enrolled at a public university in the Southeastern U.S.
5. The lack of diversity of subjects narrows the generalizability of the data.

Organization of the Remainder of the Dissertation

Chapter two will include a thorough literature review of affirmations, music therapy as well as prevalence of and popular treatments of anxiety. Chapter three will focus specifically on the methodology of the study. This chapter will include sampling,

research design, independent and dependent variables, procedures and measurement techniques designed to answer the research question. Chapter four will focus on the data analysis presentation of the results of the study. Finally, chapter five will address the following, the summary of the study, findings, conclusions and recommendations. This chapter will also address any limitations as well as future areas of investigation.

CHAPTER TWO: LITERATURE REVIEW

The review of the literature is divided into five sections. The prevalence and explanation of anxiety was addressed in the first section. The Cognitive-Behavioral models of counseling were addressed in section two. The third section explores information on the use of affirmations, the fourth section reports on music therapy and finally, the fifth section reports on treatment duration.

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4. Control, or no treatment group.

With this in mind, the following hypotheses are asserted: 1. No statistically significant difference exists in mean anxiety scores based on treatment. 2. No statistically significant difference exists in mean anxiety scores based on time. 3. No statistically significant difference exists in mean anxiety scores based on treatment and time.

Anxiety

Anxiety disorders are among the most prevalent forms of mental illness in the United States (Seligman, 1998). An estimated 25 percent of the population has suffered from some form of anxiety disorder and an additional 12 percent experiences an anxiety disorder each year (Narrow, Regier, Rae, Marderscheid, & Locke, 1993). According to researchers Powell & Ernright, (1990) the prevailing symptom in 25 percent of all psychiatric disorders is anxiety and stress related to anxiety is a significant factor in over 30 percent of patients with physical complaints seeking physicians (Maxem & Ward, 1995). Additionally, it is estimated that 80% of diseases have their origins in stress (Powell & Ernright, 1990), that stress related illness accounts for at least 75% of General Practitioner consultations (Looker & Gregson, 1989) and cost, effectiveness and safety concerns grows over the use of anti-anxiety medications (Sibbald, Addington-Hall, Brenneman, Freeling, 1993).

Anxiety can take on many forms from pervasive disorders such as Agoraphobia (a fear of open places) to a more mild, free floating form such as Generalized Anxiety Disorder. The anxiety studied in this dissertation most closely resembles that of

Generalized Anxiety Disorder. The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) requires specific characteristics of anxiety to be present in order for Generalized Anxiety Disorder to be diagnosed. These include, excessive anxiety and worry where the individual finds it difficult to control the worry and is accompanied by at least three symptoms from a list that includes restlessness, being easily fatigued, difficulty concentrating, irritability, muscle tension, and disturbed sleep (APA, 1994). However, the experience of anxiety is not limited to those with a diagnosis of an anxiety disorder. The central nervous system is equipped with a system to protect against threat or danger. When we perceive danger, whether it be a traffic accident, a difficult and angry boss, a natural disaster, or whatever may alarm us, our nervous system sends the message to 'send out the troops' and prepare for battle. Physiologically we produce the 'troops' which include CRH (corticotropin-hormone), ACTH (adrenocorticotropic hormone) and Cortisol, which aid in the acute stress response, more commonly referred to as the fight or flight response (Brigham, 1994). It is this response that helps create the physical symptoms of anxiety. Whether or not an anxiety disorder is present or diagnosed, we all have the physiological capability to produce this reaction. Any excessive anxiety is nevertheless an uncomfortable and invasive experience, and although anxiety is present in those with an anxiety disorder, it is not unique to those with this diagnosis. Everyone at one time or another is bound to experience some form of anxiety in their lifetime.

The experience of anxiety is characterized by physical and emotional symptoms. Emotional symptoms of anxiety include worry, apprehension, inability to concentrate, restlessness, and feelings of fear, panic or dread (Jones, 2002). The physical symptoms associated with anxiety include heart racing, diarrhea, upset stomach, dizziness and chest tightness (Jones, 2002). Although anxiety is a universal experience, the degree to which these symptoms are experienced will vary from mild to severe, and how each individual reacts to these symptoms will also vary. Regardless, anxiety and anxiety disorders are predominant in our society and continue to rise (Seligman, 1998; Miller & Ferris, 2001) and affects approximately 25% of the population at some point in their lifetime (Jones, 2002). Effective treatments of anxiety are still being sought. Recent trends in healthcare are turning towards low cost, rapidly successful and easily implemented treatments much like those of affirmations audio tapes.

Cognitive-Behavioral Models

One of the leading treatments for anxiety disorders or anxiety in general is the Cognitive-Behavioral model (Kelly, 1996). Each type of anxiety disorder has cognitive therapy or cognitive-behavioral therapy listed as the treatment of choice in treatment planning text books as well as theories of psychotherapy and counseling text books (Seligman, 1998; Sharf, 1996). Cognitive-Behavior Therapy promotes behavior change through the restructuring of conscious thoughts and beliefs. This theory purports that our thoughts and beliefs shape our behaviors, so much that changing our thoughts and beliefs

will change our behaviors. Researchers Smith, Glass and Miller's (1980) meta-analysis on approaches for the treatment of anxiety show cognitive and cognitive-behavioral approaches to yield the largest effect sizes (1.67 and 1.78, respectively). Furthermore, effectiveness of the Cognitive-Behavioral model in treating anxiety is supported in research by Butler, Fennell, Robson, and Gelder (1991). They report a distinct advantage of cognitive behavioral over behavioral therapy alone, because the cognitive techniques assist individuals in modifying ways of thinking or their 'self-talk' to combat anxiety and also address the consequences of anxiety.

The Cognitive-Behavioral models blend the two separate theories, Cognitive and Behavioral. Michenbaum & Cameron (1974) were promoters and forerunners of integrating these two techniques. The objective of the integration was to utilize the restructuring of conscious thoughts to foster behavioral change (Payne, 2000). The Cognitive-Behavioral model asserts that behavior is regulated by the internal dialogue termed 'self-talk'. This internal dialogue helps us make sense out of our surroundings and experiences. If we engage in positive self-talk, the outcome of a given task tends to be viewed in positive terms; if the self-talk is negative the outcome tends to be viewed in negative terms (Payne, 2000). This focus on positive self-talk aids the individual in feeling a greater sense of control over life events and to protect against excessive anxiety or stress.

Positive self-talk became a major component of Michenbaum & Camerons' (1974) approach named Stress Inoculation Training (SIT). Stress inoculation training is

a three part program. First, there is an informational stage designed to help the client to identify the problem as one that can be managed with the appropriate skills. Secondly, there is a rehearsal phase where the client practices newly acquired cognitive and behavioral coping responses. Finally, there is an application phase where clients practice the coping skills in graded stressful situations. The rationale behind the Stress Inoculation Training program is the view that individuals deal with stressful behaviors by changing their beliefs about the behaviors and the statements they make in their self-talk about how they cope with stressful situations. The SIT program has been found to be as efficacious as medication in treating anxiety disorders (Blackburn & Twaddle, 1996; Davis, Eshelman & McKay, 1998). The primary three phase paradigm has been evolving since its' inception in the 1970's. As the SIT model is refined, research on the efficacy of the individual phases and components of the program becomes important.

Affirmations

One of the components of the Stress Inoculation Training program that has been looked at independently of the other components of the program is the statements made or the self-talk of the clients. Affirmations are defined as short, positive sentences or statements repeated to oneself in the first person which act like self hypnotic suggestions, influencing the view of the person's sense of self in a positive direction (Fanning, 1988). Long before the Stress Inoculation Training program considered positive self talk, or the current 'New Age' movement (Melton, 1991) talked of affirmations as a therapeutic tool,

the 1920's was introduced to these positive self statements as conscious autosuggestion by a French Therapist named Emile Coué. Coué introduced this technique to his clients and instructed them to repeat the phrase "Every day in every way, I'm getting better and better." According to Coué, repeating this phrase 20 times in the morning and 20 times in the evening and frequently throughout the day was enough to cure many ailments and in a very short time (Coué, 1922).

This technique of repetition of positive statements to oneself was then referred to as conscious autosuggestion (Baudouin, 1922). This new treatment was said to change psychological makeup by only changing what you were saying to yourself. It was a simple, effective, self administered tool that one did not have to go through long term psychoanalysis to benefit from. Conscious autosuggestion was the process of repeating these statements so often that your unconscious mind could no longer filter the message out and began to automatically accept the thought (Baudouin, 1922). Coué claimed that repeating these statements frequently was a way of bypassing the will and letting the imagination accept the new thought without any counter-arguing from the conscious mind (Coué, 1922). He also argued that repeating the statements with a relaxed intention was best for an optimal effect. While the statements were being repeated, it was recommended that letting one's mind drift to other thoughts was not only acceptable but encouraged so that resistance from the conscious mind would be minimized (Brooks, 1922).

Presently, the 'New Age' movement (Melton, 1991) seems to borrow from the foundation of Coué's conscious autosuggestion in the use of affirmations and has furthered these statements into a process called guided imagery. Guided imagery, related to affirmations, is the process of repeating positive images rather than statements to induce a state of well being (Naperstek, 1994). The same principles apply to the guided imagery process as to the affirmations process, and the same instructions are encouraged. The optimal effect is obtained when one's mind is allowed to drift so that resistance from the conscious mind is minimized. Just like the affirmations technique, guided imagery is a way of bypassing the conscious mind and letting the images and related feelings slip into the unconscious and impact not only how you feel, but the state of your immune system as well (Brigham, 1994; Clark, 2000; Naperstek, 1994).

The latest health related research linked to affirmations and imagery comes from the new science termed psychoneuroimmunology (PNI). This is partly based on the study of the effects of our thought process on our immune system. Accumulating PNI research indicates that the immune system and the central nervous system have direct communication systems with each other and are influenced greatly by one another (Ader, 1981; Brigham, 1994; Norris, 1988). Furthermore, our thoughts, perceptions and feelings can alter our immunity through this two way mind-body pathway of communication, concluding that perception can affect illness and illness can affect perception (Clark, 2000). The medical field has a plethora of information regarding the use of affirmations and guided imagery on immune system functioning and other physiological processes.

Many medical studies are finding strong evidence to support the effectiveness of these techniques (Achterberg & Lawlis, 1984; Brigham, 1994; Esplen , Garfinkel, Olmsted, Gallop & Kennedy, 1998; Lambert, 1996; Napersteck, 1994).

In a study on pediatric postoperative outcomes, Lambert (1996) studied fifty-two children who were randomly assigned to an experimental or control group. The experimental group received training in guided imagery on favorable postoperative outcomes while the control group received standard care. The study found significantly lower postoperative pain ratings and shorter hospital stays for the experimental group. Anxiety was decreased for the guided imagery group while it increased postoperatively for the control group. The study concludes that imagery has a beneficial effect on the post-op course of pediatric surgical patients. Additionally, researchers at the renowned Fred Hutchinson Cancer Research Center in Seattle found that relaxation and imagery training reduces bone marrow transplant treatment-related pain in the mucous linings of the mouth. The study found that patients who received either the relaxation & imagery condition alone or patients who received the package of cognitive-behavioral coping skills including imagery, reported less pain than patients in the other 2 groups (Syrjala, Donaldson, Davis, Kippes, & Carr, 1995). However, in a recent study on patients suffering from severe heart failure, patients listening to guided imagery tapes without music had no significant improvement in the physiological measures (Klaus, Benkaminovitz, Choi, Greenfield, Whitworth, Gerard, Oz and Mancini, 2000). In a study at the University of Aberdeen Behavioural Oncology Unit in the U.K., ninety-six women

with locally advanced breast cancer were studied. The women were randomly assigned to either standard care, or standard care plus relaxation training and guided imagery. At the conclusion of the study, the relaxation/imagery patients were more relaxed, had better quality of life, and less emotional suppression (Walker, Walker, Ogston, Heys, Ah-See, Miller, Hutcheon, Sarkar & Eremin, 1999).

In research conducted on eating disorders (Esplen et al, 1998), a well designed trial compared 50 subjects who met the criteria for bulimia. The fifty subjects were randomly assigned to one of two groups, a guided imagery group or a standard care group. The guided imagery treatment group reduced bingeing by 74% and purging by 73%. The imagery treatment also demonstrated improvement in attitudes about eating, dieting and body weight in control to the control group. Additionally, the guided imagery group demonstrated improvement on psychological measures of aloneness and the ability for self-comforting. These findings conclude that guided imagery is an effective short-term treatment for bulimia nervosa.

Looking again at affirmations as a part of guided imagery, one study in Boston (Irvin, Domar, Clark, Zuttermeister & Friedman, 1996) looked at 33 menopausal women between 44-66 years old who were assigned to either Relaxation Response training, a support group or a control group. The Relaxation Response is a technique developed by Herbert Benson, very similar to an affirmation, that simplifies the essence of ancient mantra and breathing meditation (Benson, 1976). It involves conscious breathing and repeating a calming word or phrase to your self, such as "Peace" or "All is well". The

study found The Relaxation Response group had significant reductions in hot flash intensity, tension-anxiety, and depression. The support group had significant reductions in tension-anxiety and confusion-bewilderment while the control group stayed the same.

Another research study's focus was on the affect of subliminal affirmations on short-term memory (Chakalis and Lowe, 1992). The study looked at recall of face, name and occupation. The sixty subjects were pretested, administered a 15 minute treatment, and post tested. Three treatment groups were, no treatment, relaxation music, relaxation music with subliminal affirmations. Only the subliminal affirmations group significantly improved their performance on recall.

Although these studies are abundant in the medical field, more studies need to be conducted on the effects of affirmations in the counseling field. Much research points to the physiological result to the relaxation response and other elusive effects generated from the use of guided imagery, however little is known about the affective response or the impact on anxiety reduction. Furthermore, Coué, PNI research nor the New Agists have provided empirical data supporting the efficacy of affirmations on affective responses or behavioral responses.

Research supports the effectiveness of music therapy on the relaxation response. Little is known about the effects of affirmations without the benefit of relaxation music accompanying it. There are many affirmations and guided imagery tapes available on the public market which routinely include some type of relaxation music played in the background. The developers of these products claim to have success with these products

and have testimonials from authors and physicians to support their products. Generally when these products are sold on the public market, there is relaxation music played softly in the background while the imagery or affirmations are being repeated. Music has been known to influence medical outcomes positively as well as enhance the relaxation response (Scartelli, 1989; Rider & Weldin, 1990). The studies in which guided imagery and affirmations had proven to assist in positive outcomes, more than likely had relaxation music playing in the background. There is cause to consider how much the music is influencing the relaxation effects rather than the imagery or affirmations statements. If the music is the cause of the relaxation, then of what benefit is the affirmation to anxiety reduction? In considering the music is already empirically supported as having a strong relaxing affect, is it possible the affirmations may take away from the music's potency? Additionally, if it is found that the affirmations are as effective as the music, the implications are powerful. The affirmations then can be used anywhere, and without music, because they are a non-invasive intervention and can be used without detection.

Music Therapy

Music therapy has a long history in the medical and counseling field. Firstly, music's presence in the medical field can be traced back to ancient cultures (Boxberger, 1962). Chants were used to treat many medical ailments during this time, which led to music being empirically studied as a treatment for various psychological and

physiological problems (Maranto, 1993). The findings that were a product of these studies revealed the effects of music on insomnia and fevers (Davison, 1899); blood pressure, circulation, cardiac contraction, and respiration (Eagle, 1972). Present day research in the medical field continues to show positive effects of music therapy. Music has been proven by research to influence and enhance your immune system by increasing Secretory Immunoglobulin A (Rider & Weldin, 1990), to reduce the amount of anesthesia needed for surgery and is shown to reduce pain responses during labor (Spintge, 1983; Hanser et al., 1983). These findings are similar to those found during the use of guided imagery tapes which were also accompanied by relaxation music played in the background. The similarities in the medical findings and positive effects of music therapy and the guided imagery tape with the relaxation music accompaniment are striking. Similar findings are noted when comparisons are made on the relaxation effects of music therapy versus the affirmations or guided imagery tapes.

Out of the interest in the effects of music on functioning and general well being, music therapy became more popular and continued to grow into other areas of study. The influence on the relaxation response has been one of the most important contributions of the development of music therapy (Scartelli, 1989). The development of music as a relaxation tool began after World War II when soldiers suffering from emotional trauma or what was then called 'battle fatigue' (Hall, 1982). Men who were almost completely absent and out of touch with reality due to the trauma, and who did not respond to any other form of treatment, did respond to music therapy. The calming influence of music

seemed to have an impact on their condition (Hall, 1982). These responses led hospital administrators to request the hiring of musicians to play music for the patients. This led not only to further research in the relaxation response of music therapy but also to specific training programs and the development of the first music therapy degree program at Michigan State University in 1944 (Keegan, 2001).

The studies on the relaxation effects of music therapy pointed to the decrease in physiological tension and anxiety scores (Ballard, 1981; Candler, 1978; Kooyman, 1988; Landreth & Landreth, 1974; Thaut, 1989), to reductions in anxiety during pregnancy (Winslow, 1986; Lindquist, 1985), reductions in anxiety prior to surgery (Spintage, 1991), reductions in anxiety post surgery (Updike & Charles, 1987), and during dental procedures (Corah, Gale, Pace & Seyrek, 1981). More recently, Cunningham, Monson and Bookbinder (1997) report that more hospitals are instituting music programs due to the recent controlled experiments with hospitalized patients that show music listening alone is effective in reducing anxiety. Other current research on the relaxation effects of music therapy include decreasing anxiety (Zimmerman, Nieveen, Baranson & Schmaderer, 1996). Clark and colleagues (1998) found music to decrease aggressive behaviors in elderly patients with dementia. The treatment group which experienced music therapy displayed more calm behaviors and appeared less anxious and distressed after experiencing the music therapy. Chlan (1995) found music therapy to decrease stress while Kaminski & Hall (1996) found it to reduce high arousal states in neonates. These findings of the effects of the relaxation response are similar to those found with the

use of guided imagery tapes which were also accompanied by relaxation music played in the background. The similarities in these findings of the positive effects of music therapy and the guided imagery tape with the relaxation music accompaniment are strikingly similar. Again, there is cause for speculation as to where the benefits are coming from. If the music therapy has already been established as an effective therapeutic relaxation tool, of what benefit is the additional guided imagery or affirmations statements to anxiety reduction, and do they have benefit when standing alone without the already empirically supported effects of the music that is played in the background?

Treatment Duration

One interesting question posed in this study is how long the treatment needs to take place in order to have an effect on the relaxation response. In other words, if there is a relaxing or anxiety reducing effect produced by affirmations, is a ten minute treatment sufficient for results? A second question posed in the study is that if there is a positive effect found, will the effects become stronger with longer treatments or with training to accompany the use of the audio tapes? Some interesting research already exists on the effectiveness of short term treatments of music therapy and guided imagery or affirmations.

In a study on the effects of music therapy to decrease anxiety and increase relaxation for participants receiving ventilatory care, Chlan (1998) reported significant findings. After only 30 minutes of music treatment patients in an intensive care unit

receiving ventilation assistance significantly decreased in anxiety and increased relaxation, as indicated by decreases in their heart rate and respiratory rate. In another study on the duration of treatment of music therapy and its' effectiveness, Pacchetti and colleagues (1998) studied individuals with Parkinson's Disease. At the beginning and ending of every session of music therapy patients were evaluated with the Parkinson's Disease Quality of Life Questionnaire. Neurologists found a significant improvement on test scores on motor functioning after the first session, and every session. Quality of life scores and emotional functions were found to improve as well. In considering the complexity of the central nervous system and how quickly the startle reflex can spring into action, or how quickly your nervous system can produce a rapid heartbeat at the sound of something unfamiliar and alarming in the middle of the night, it is not surprising then to know that rhythmic sounds in music can change pulse, heart rate, breathing, skin temperature and brain wave patterns in as little as 40 to 50 seconds. Don Campbell (1991), one of the leading researchers on the physical and emotional effects of sound waves reports this fascinating and rapid effect of music.

Music therapy has established itself as a valid and reliable tool in combating anxiety both physiologically and affectively. In both the medical field and the counseling profession, research has been established to support music therapy and the many claims of its' effectiveness. Affirmations or guided imagery audio tapes with relaxation music played in the background have not been isolated and separated to test their effectiveness alone. From the information provided, it can be concluded that there is a great deal of

debate over the effectiveness of affirmations as a means of enhancing relaxation. Finding efficacious, low cost, treatments of anxiety is of considerable importance in our society due to the overwhelming prevalence and rise of the disorder. Therefore, this study's purpose is to determine if affirmations have an impact on anxiety reduction.

CHAPTER THREE: METHODOLOGY

Introduction

The purpose of this study was to determine if the use of affirmations aids in the reduction of anxiety. In addition, this study examined if the use of affirmations combined with relaxation music aids in the reduction of anxiety and examined if the use of relaxation music alone aids in the reduction of anxiety. This study investigated the following question: Is there a difference in the level of self-reported anxiety among individuals who experience an audio tape of affirmations compared to experiencing an audio tape of affirmations combined with relaxation music, compared to experiencing an audio tape of relaxation music alone, to those that do not?

In this study, four group conditions were compared:

1. Experience of 10 minutes of an audio tape of affirmations.
2. Experience of 10 minutes of an audio tape of affirmations combined with relaxation music.
3. Experience of 10 minutes of an audio tape of relaxation music.
4. Control, or no treatment group.

With this in mind, the following hypotheses are asserted: 1. No statistically significant difference exists in mean anxiety scores based on treatment. 2. No statistically significant difference exists in mean anxiety scores based on time. 3. No statistically significant difference exists in mean anxiety scores based on treatment and time.

Chapter three presents the methods, experimental treatments, procedures employed for subject selection, and measurement.

Subject Selection

Male and Female college students enrolled in undergraduate psychology courses, Child Psychopathology (CLP 4124) & Human Sexual Behavior (SOP 2772), in the Fall, 2002 semester at a large southeastern university comprised the samples for this study. The study was originally planned to be carried out with the subjects in CLP 4124. However, due to a lighting problem on the evening of the study, which potentially skewed the data, the study was conducted a second time with similar subjects in SOP 2772.

The second data set was collected from similar students in the undergraduate psychology course SOP 2772. This study's goal was to collect and measure anxiety reduction. The subjects were chosen at a time when their anxiety was likely to be elevated. The subjects were experiencing the treatments one hour prior to a mid-term examination in their regularly scheduled class. What is particularly interesting about the results as a whole, is that the first group, subjects in CLP 4124, experienced a power outage just as they were about to fill out their first Beck Anxiety Inventory. All four rooms of the experiment, meaning all treatment rooms as well as the control group room, lost power and all lighting including emergency lighting. Each room was pitch black, so dark that you were unable to see your hand in front of your face. The power was out for

approximately 3 to 5 minutes in all four rooms. The power came back on and remained on for the duration of the study. The power outage and loss of lighting forced a re-run of the data collection. The study and data collection began again, from the beginning. In essence, the study was duplicated with a class that was very similar to the first. In the interest of keeping the subjects as similar as possible in order to compare data sets, subjects were recruited from the same department, who were at approximately the same academic year (juniors) at approximately the same testing time (mid-semester) as the first data set. The second running of the study had no loss of power or similar disruptions to skew the data. What is especially interesting about having these two data sets, is that the lighting failure could not have happened at a more favorable time. The fact that this happened at the time it did offered a chance to see what happened with the treatments in a real life anxiety provoking situation, including the testing anxiety the students were expected to be experiencing.

Both classes were approached during their class time, flyers describing the study were distributed (Appendix A) and volunteers were asked to sign up to participate in the study. Because of low attendance in the SOP 2772 class, students were also contacted through the university's e-mail system where a form letter was sent out to all members in the class describing the study and recruiting volunteers (Appendix B). Once volunteers were recruited, all willingly signed IRB approved (Appendix C) informed consent forms prior to beginning the study. In the CLP 4124 group the professor had randomly assigned the students numbers earlier in the term, so this process of assigning numbers was

skipped. After the collection of informed consent forms, subjects were assigned a number in the order in which they appeared on the class roll, and then randomly assigned to one of three treatment groups or a control group.

Instrumentation

The Beck Anxiety Inventory, a widely respected psychological self-report anxiety inventory, was utilized in this study. Because of the numerous reports of reliability and validity over the years, and general respect received from the community of scientific investigation, it was chosen for this study (Beck, Emery, Rush & Shaw, 1979; Beck, Brown, Riskind, & Steer, 1987; Beck, Epstein, 1988; Dowdall, Chambless, & Fydrich, 1990).

The Beck Anxiety Inventory (BAI) (Appendix D) was used to measure the anxiety level of each of the subjects on two separate occasions. On the first occasion (pretest) the Beck Anxiety Inventory was administered before the subjects experienced the ten minute treatment of affirmations only, affirmations with music, or music only treatment. The second time (posttest) the Beck Anxiety Inventory was administered after the completion of the ten-minute treatment. The pretest and posttest were administered to the control group at the same approximate times as the experimental groups.

The Beck Anxiety Inventory is a Likert-type instrument where respondents indicate descriptive statements of the severity of 21 anxiety related symptoms on a four-part scale. The Beck Anxiety Inventory was chosen for this study because of it's reported

accuracy in measuring anxiety symptoms and general respect received from the community of scientific investigation. Items were drawn from three prominent anxiety inventories and used for a number of years at the Center for Cognitive Therapy. Inventories used were the Anxiety Checklist (ACL; Beck, Steer, & Brown, 1985), the Physician's Desk Reference Checklist (PDR; Beck, 1978), and the Situational Anxiety Checklist (SAC; Beck, 1982). The initial pool of 86 items were identified from a sample of 810 outpatients who had completed the Anxiety Check List, the Physicians Desk Reference Checklist, and Situational Anxiety Checklist from the Center for Cognitive Therapy who had predominantly mood and anxiety disorders. Beck, Epstein, Brown, & Steer (1988) eliminated all but 21 items through a series of principle-factor analyses and item analyses procedures as well as testing a second sample of 116 outpatients who had completed the Anxiety Check List, the Physicians Desk Reference Checklist, and Situational Anxiety Checklist from the Center for Cognitive Therapy who had predominantly mood and anxiety disorders.

A final sample of 160 outpatients were studied extensively for validity and reliability purposes by the researchers Beck et al. (1988). A sub-sample of 83 outpatients from the study completed the BAI one week after their initial BAI and evaluation and before beginning their treatment at the Center for Cognitive Therapy (Beck, Rush, Shaw, & Emery, 1979) for test-retest reliability scores. The correlation between initial BAI score and one week BAI score was .75 ($p \leq .001$) which is large enough to warrant confidence in the instrument's measurement of anxiety (Beck, Rush, Shaw & Emery,

1979). Content validity is addressed by symptomatology corresponding to the diagnosis criteria considered to represent anxiety disorders according to the Diagnostic and Statistical Manual of Mental Disorders III-R. The content validity total score reliability (based on Cronbach's Alpha) for Panic Disorder with Agoraphobia (N=95) was .93, Panic Disorder without Agoraphobia was .92, Social Phobia was .91, Obsessive-Compulsive Disorder was .91, Generalized Anxiety Disorder was .85.

The Beck Anxiety Inventory was found to discriminate between anxiety and other psychiatric disorders and was found to have high internal consistency (Cronbach coefficient alpha= .92) (Beck, et al. 1988). The BAI also showed good concurrent validity when subjects' scores were also compared to their Hamilton Rating Scale scores (correlation = .51, $p \leq .001$) (Riskind, Beck, Brown, & Steer, 1987). The subjects' scores on the BAI were also compared to their sub-scale scores of the Cognition Check List (CCL-A; Beck, et al. 1987), which measures dysfunctional thought processes related to anxiety and their frequency. Fydrich, Dowdall, & Chambless (1990) agreed with these findings and reported that the BAI was significantly correlated with the State-Trait Anxiety Inventory (Form Y) ($r= .47$, $p= .01$) and ($r=.58$, $p \leq .001$), respectively (State Trait Anxiety Inventory; Speilberger, 1983).

In summary, scores produced by the Beck Anxiety Inventory have been established as a valid and reliable measure of anxiety. Because of its' reported and general respect received from the community of scientific investigation, it was chosen for this study.

Procedure

Once volunteers were recruited, all willingly signed informed consent forms prior to beginning the study. In the CLP 4124 group the professor had randomly assigned the students numbers earlier in the term, so this process of assigning numbers was skipped. After the collection of informed consent forms, subjects were assigned a number in the order in which they appeared on the class roll, and then randomly assigned to one of three treatment groups or a control group. The students were notified of group and room assignment by flyers during class. The study was scheduled one hour prior to their scheduled class exam. The CLP 4124 group was scheduled on October 21st, 2002 at 7:00pm. Each group met in 4 separate rooms with 1 volunteer in each room, trained with a script (Appendix E) who lead them through the treatment or control group protocol. The SOP 2772 class was scheduled on November 26th at 2:00pm. A similar protocol was followed.

All subjects completed the Beck Anxiety Inventory as a pretest at the start of the study and again as a posttest after ten minutes of the experimental treatment or control group no treatment. The instruments were administered by female graduate students in the Counselor Education Masters program in the College of Education at the same university.

Subjects in the experimental groups were exposed to one of three types of relaxation audio tapes. The control group (group 1) was not exposed to a treatment. The subjects in this group were told they would re-take the BAI in approximately ten minutes.

No further instructions were given until the posttest was administered. Experimental group two was exposed to ten minutes of ©Health Journeys *Meditation Music Audio Tape*. This is a duplicate of the relaxation music on the tapes played for experimental groups three and four. Experimental Group three was exposed to ten minutes of ©Health Journeys *Affirmations Audio CD,* without music. These are the duplicate unconditional positive statements that are found on the ©Health Journeys *Affirmations Audio Tape*, only without the relaxation music played in the background or in between the affirmations statements. Experimental group four was exposed to ten minutes of ©Health Journeys *Affirmations Audio Tape.* This includes unconditional positive statements (Appendix F), combined with relaxation music played in the background and in between statements.

At the arranged time, volunteers began reading their script (Appendix E) which instructed subjects on taking the pretest, experiencing the ten minute treatment, taking the posttest and exiting the room to leave for their class exam. Experimental groups three and four were asked to follow the instructions at the beginning of the audio tape. These instructions guided the subjects through the process of the use of the audio tape of affirmations and how to experience the tape effectively. Experimental group two (music only group) was instructed by the volunteer to listen to the audio tape of music. For the control group, or group 1, the volunteer read the script which gave a brief overview of the procedure of taking the BAI, and administered the BAI pretest. After the pretest, the subjects were then told they would re-take the BAI in approximately ten minutes. No

further instructions were given until the posttest was administered, at which time instruction resumed as in the other groups.

Research Question

This study investigated the following question:

Is there a difference in the level of self-reported anxiety among individuals who experience an audio tape of affirmations compared to experiencing an audio tape of affirmations combined with relaxation music, compared to experiencing an audio tape of relaxation music alone, to those that do not?

In this study, four group conditions were compared:

1. Experience of 10 minutes of an audio tape of affirmations.
2. Experience of 10 minutes of an audio tape of affirmations combined with relaxation music.
3. Experience of 10 minutes of an audio tape of relaxation music.
4. Control, or no treatment group.

With this in mind, the following hypotheses are asserted: 1. No statistically significant difference exists in mean anxiety scores based on treatment. 2. No statistically significant difference exists in mean anxiety scores based on time. 3. No statistically significant difference exists in mean anxiety scores based on treatment and time.

Statistical Analysis

After consultation with three faculty members, two research and statistical specialists and one education and research specialist, it was decided that a Repeated Measures Analysis of Variance (ANOVA) would be conducted to test the effectiveness of the treatment. Gall, Borg and Gall (1996) maintain that Repeated Measures ANOVA is a suitable statistical procedure for determining the statistical significance of pretest-posttest change. According to Gall, Borg and Gall (1996), when employing this procedure, the interaction between time of measurement and treatment is of particular interest to the analyst. The interaction effect suggests the degree to which the difference between the pretest and posttest means of the experimental group is significantly greater or less than the difference for the control group (Gall, Borg and Gall, 1996, p. 536). All statistical computations were performed using the computer program Statistical Package for Social Sciences, Version 10.1 (Norusis, 1999). The 0.05 level of significance was chosen for this study.

CHAPTER FOUR: DATA ANALYSIS

The present study examined if the use of affirmations aids in the reduction of anxiety, if the use of affirmations combined with relaxation music aids in the reduction of anxiety and finally if the use of relaxation music alone aids in the reduction of anxiety.

The present study was designed and data was analyzed to evaluate the following question: Is there a difference in the level of self-reported anxiety among individuals who experience an audio tape of affirmations, those experiencing an audio tape of affirmations combined with relaxation music, those experiencing an audio tape of relaxation music alone, & those that do not?

In this study, four group conditions were compared:

1. Experience of 10 minutes of an audio tape of affirmations.
2. Experience of 10 minutes of an audio tape of affirmations combined with relaxation music.
3. Experience of 10 minutes of an audio tape of relaxation music.
4. Control, or no treatment group.

With this in mind, the following hypotheses are asserted: 1. No statistically significant difference exists in mean anxiety scores based on treatment. 2. No statistically significant difference exists in men anxiety scores based on time. 3. No statistically significant difference exists in mean anxiety scores based on treatment and time. In this chapter, the results of the statistical analysis of the data sets are presented. A repeated

measures analysis of variance (ANOVA), sometimes referred to as SPANOVA, was deemed suitable for these data.

Two complete data sets will be presented. The first data set to be presented will be referred to as the "blackout group". The second data set to be presented will be referred to as the "normal lighting group". The data sets will be referred to these titles throughout the rest of this dissertation.

These two sets of subjects, the blackout group and the normal lighting group, were randomly assigned to one of four groups, leaving a total of eight possible groups. The groups were divided into 2 control groups which comprised of 50 subjects total, 2 relaxation music only groups which comprised of 33 subjects total, 2 affirmations only groups which comprised of 34 subjects total, and 2 affirmations plus music groups which comprised of 45 subjects total. The total sample of 163 subjects was used in this study. The total sample consisted of 127 females (78%) and 36 males (22%). As these data indicate, each group was composed of a majority of females. The first data set, the CLP 4124 class or the "blackout group" consisted of 93 subjects. The second data set, the SOP 2772 class or the "normal lighting group" consisted of 70 subjects.

The Blackout Group Results

Considering the unequal group sizes, the Box's Test of Equality of Covariance Matrices will be interpreted. Box's test is significant, showing a p value of .000 and is presented in Table 1.

Table 1

Box's Test of Equality of Covariance Matrices For Blackout Group

Box's M	F	df1	df2	Sig
35.823	3.798	9	30809.288	.000

The Box's test of equality of covariance matrices tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups. Discovering that a significant Box's test was obtained and knowing the groups have unequal N's, the data was re-evaluated in order to authenticate conclusions drawn. To resolve the violation of homogeneity, the N's were reduced to equal groups. The data was analyzed once again with equal groups (N=15). These results duplicated those found in the previous data analysis where the groups were unequal and the Box's test was significant. Because the results of the data were essentially duplicated with the equal groups, it was decided to report the conclusions with the larger N in order to demonstrate the same conclusions yet with the stronger power obtained.

In order to clarify the differences among the blackout groups' anxiety scores, the descriptive statistics of participants' pre and posttest anxiety scores are presented in Table 2. Participants' pretest anxiety mean scores for the blackout group range from 7.5 to 11.8

(SD = 7.825; N = 93). The posttest anxiety mean scores for the blackout group range from 3.62 to 9.18 (SD = 5.865; N = 93).

Table 2

Descriptive Statistics Blackout Group

Treatment Group	Pretest Mean	Posttest Mean	S.D. Pre	S.D. Post
Control	10.8	9.2	9.3	8.7
Music Only	11.8	4.3	8.6	4.7
Affs. Only	10.3	5.7	6.0	4.9
Affs. + Music	7.5	3.6	7.5	5.1

To determine the effect of the three treatment groups and one control group, on anxiety reduction, the groups were examined using the repeated measures analysis of variance (ANOVA). The analysis of variance Within Subjects Contrasts Test Summary Table and Between Subjects Test Summary Table are presented in Table 3 and Table 4 respectively. A statistically significant Main Effect was found, $F(1, 89) = 89.939$, $p = .000$, $\eta^2 = .503$. Additionally, a statistically significant interaction was found suggesting that the treatment influenced the reduction in anxiety, $F(3, 89) = 7.02$, $p = .000$, $\eta^2 = .191$. Almost 20% of the variation in the anxiety reduction can be attributed to the treatment. According to Cohen (1977) an effect size greater than 6% in the social and behavioral sciences is considered acceptable or moderate in magnitude.

Table 3

ANOVA Within-Subjects Contrasts Test Summary Blackout Group

Source	df	Mean Square	F	Eta Squared
Time	1	813.929	89.939**	.503
Interaction	3	65.566	7.024**	.191
Residual (Time)	89	9.050		

Note * $p \leq .05$ ** $p \leq .001$

Table 4

ANOVA Between-Subjects Effects Test Summary Blackout Group

Source	df	Mean Square	F	Eta Squared
Treatment	3	192.595	1.911	.539
Error	89	100.767		

Note * $p \leq .05$ ** $p \leq .001$

In an effort to provide a comprehensive picture of the results from the blackout group data collection, a visual representation is provided with a profile plot presented in Figure 1.

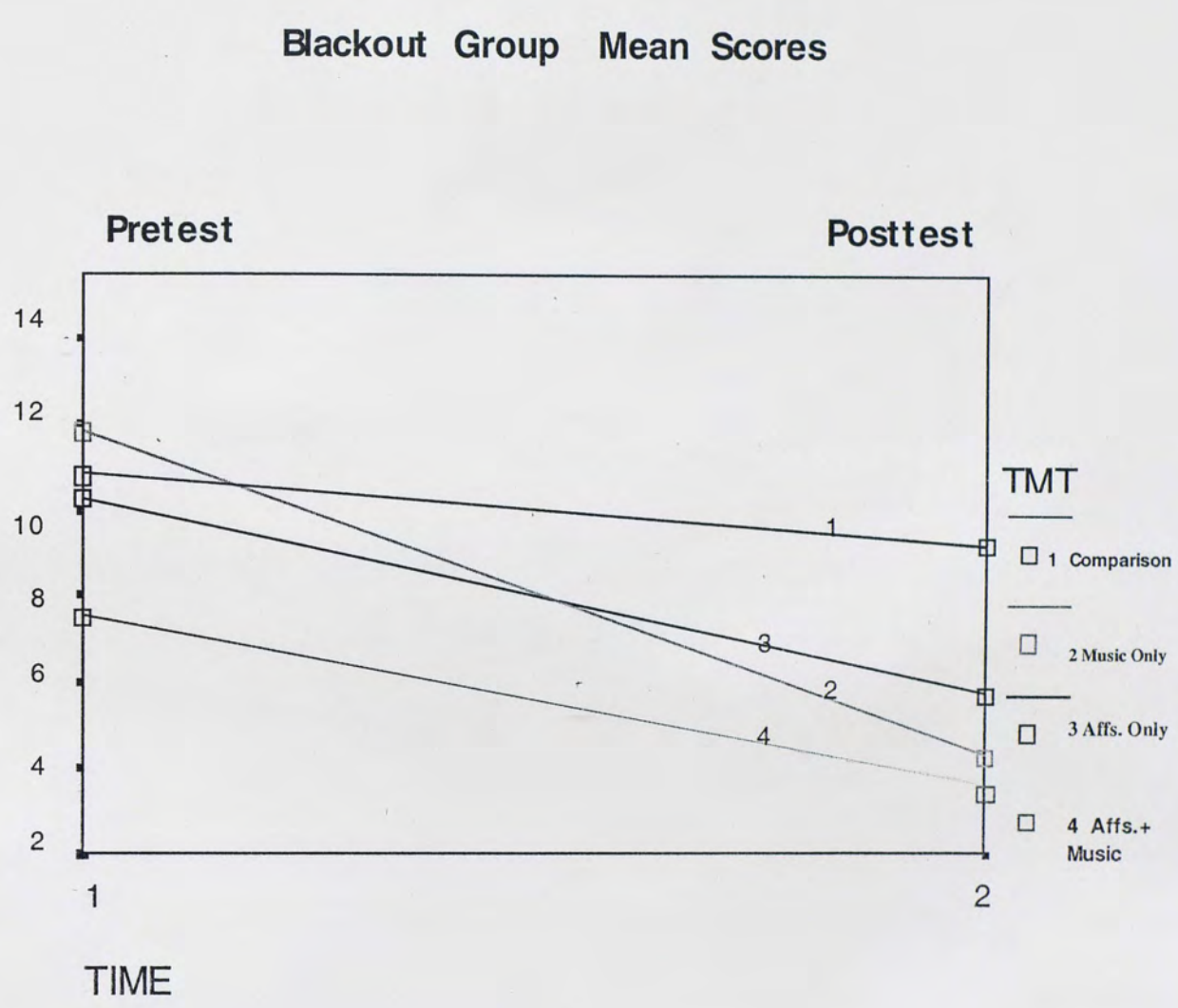

Figure 1: Profile Plot of Blackout Group Anxiety Score Means Pretest to Posttest

Music Group Scores Explained

As shown in the Profile Plot, the group with the most dramatic downward slope is the Relaxation Music Only Group. These results reflect that the group who participated

in listening to ten minutes of an audio tape of relaxation music alone compared to the other three groups, had the greatest reduction in anxiety scores. This is also evident in examining the descriptive statistics presented in Table 8 where the music only group mean anxiety score at the pretest was approximately 12 points and at the posttest was approximately 4 points. This indicates a mean reduction in anxiety of approximately 8 points for the music only group compared to the other treatment groups which averaged a mean anxiety score reduction of 3 points. However, in consulting the Between Subjects Effects Table presented in Table 4 we are reminded that there is no statistical significance between the groups even though the profile plot appears quite meaningful.

Normal Lighting Group Results

Considering the unequal group sizes, the Box's Test of Equality of Covariance Matrices will be interpreted. Box's test is significant showing a p-value of .000 and is presented in Table 5.

Table 5

Box's Test of Equality of Covariance Matrices For Normal Lighting Group

Box's M	F	df1	df2	Sig
65.323	6.855	9	43547.731	.000

The Box's test of equality of covariance matrices tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups. Discovering that a significant Box's test was obtained and knowing the groups have unequal N's, the data was re-evaluated in order to authenticate conclusions drawn. To resolve the violation of homogeneity, the N's were reduced to equal groups. The data was analyzed once again with equal groups (N=16). These results duplicated those found in the previous data analysis where the groups were unequal and the Box's test was significant. Because the results of the data were essentially duplicated with the equal groups, it was decided to report the conclusions with the larger N in order to demonstrate the same conclusions yet with the stronger power obtained.

In order to clarify the differences among the normal lighting group anxiety scores, the descriptive statistics of participants' pre and posttest anxiety scores are presented in Table 6. Participants' pretest anxiety mean scores for the normal lighting group range from 5.38 to 10.50 (SD = 7.6; N = 70). The post- test anxiety mean scores for the normal lighting group range from 1.77 to 9.62 (SD = 5.55; N = 70).

Table 6

Descriptive Statistics Normal Lighting Group

Treatment Group	Pretest Mean	Posttest Mean	S.D. Pre	S.D. Post
Control	10.5	9.6	11.2	12.4
Music Only	5.3	1.8	4.7	3.0
Affs. Only	7.9	4.2	6.4	3.8
Affs. + Music	6.8	2.9	6.5	3.1

To determine the effect of the three treatment groups and one control group, on anxiety reduction, the groups were examined using the repeated measures analysis of variance (ANOVA). The analysis of variance Within Subjects Contrasts test summary table and Between Subjects test summary table are presented in Table 7 and Table 8 respectively. In examining the Within-Subjects Contrasts, the following results were observed in the normal lighting group. No statistically significant interaction was found, suggesting that in the normal lighting group, the specific treatments did not influence anxiety reduction $F(3, 66) = 1.999$, $p = .123$. Reasons for this are addressed in detail in the discussion section.

While examining the Within Subjects Contrasts in Table 7 for the normal lighting group however, we find a statistically significant Within–Subjects Main Effect, suggesting that all groups reduced in anxiety scores as a result of a or any treatment $F(1,66) = 36.829$, $p = .000$, $\eta^2 = .358$. The effect size is large with treatment accounting

for roughly 36% of the variation in reduction of anxiety scores. In consulting the Between Subjects Effects Table presented in Table 8, a statistically significant difference among groups was found F (3, 66) p= .041, however, the Post Hoc tests did not detect a significant difference between groups, indicating the difference between groups is too modest to specify.

Table 7

ANOVA Within-Subjects Contrasts Test Summary Normal Lighting Group

Source	df	Mean Square	F	Eta Squared
Time	1	315.478	36.829**	.503
Interaction	3	17.126	1.999	.191
Residual (Time)	66	8.566		

Note * p≤ .05 ** p≤.001

Table 8

ANOVA Between-Subjects Effects Test Summary Normal Lighting Group

Source	df	Mean Square	F	Eta Squared
Treatment	3	264.565	2.918*	.117
Error	66	90.671		

Note * p≤ .05 ** p≤.001

In an effort to provide a comprehensive picture of the results, from the normal lighting group, a visual representation is provided with a profile plot presented in Figure 2.

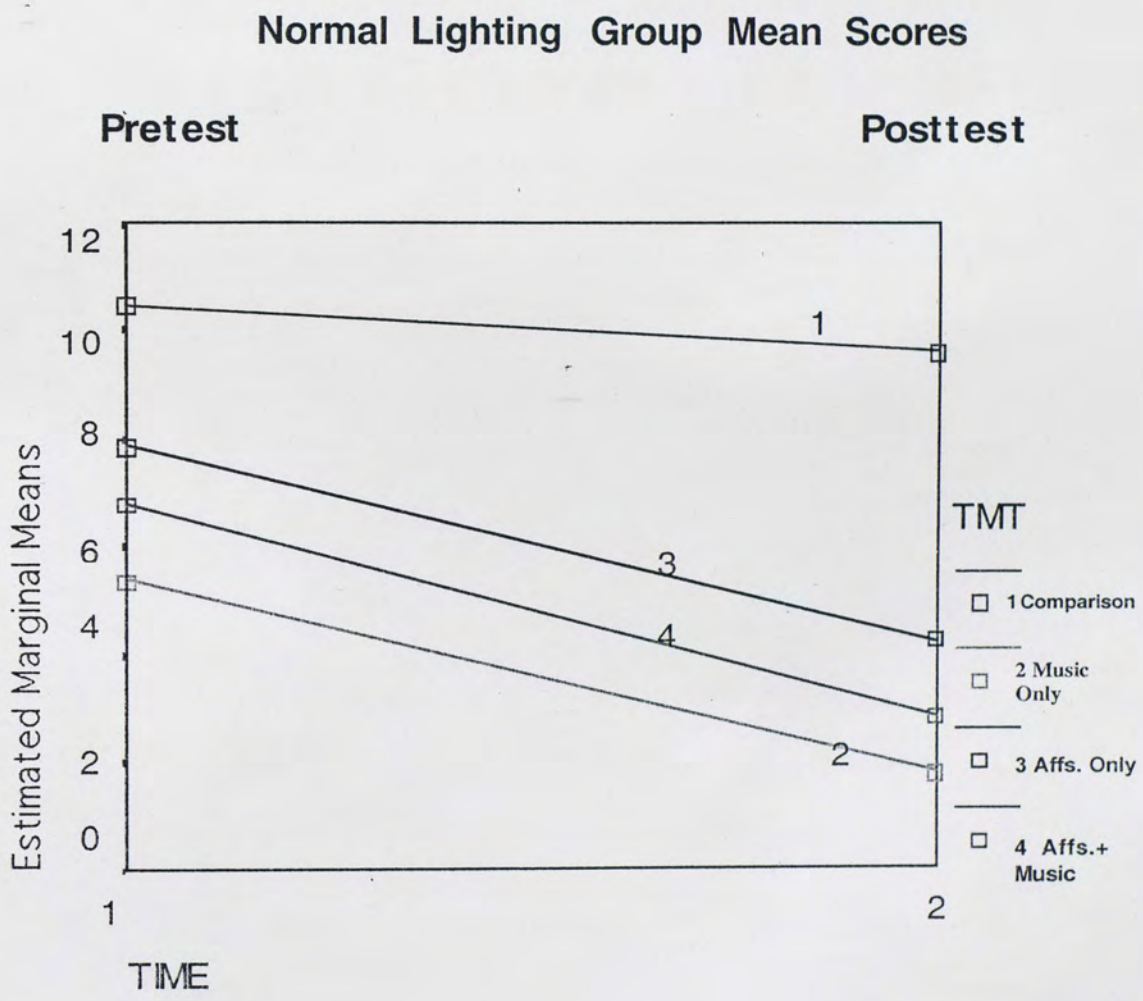

Figure 2: Profile Plot of Normal Lighting Group Anxiety Score Means Pretest to Posttest

In examining the profile plot, it appears as if no group had a larger or more dramatic slope than the others. These results seem to reflect that all treatment groups had relatively the same mean scores on anxiety. However, in consulting the Between Subjects Effects Table presented in Table 8, there is a statistically significant difference among groups F (3, 66) p= .041. Examining a Post Hoc Test, we find the difference is found between the control group and the music only group, however it is too small to warrant a change in current practice. This will be addressed in further detail in the discussion chapter of this dissertation.

Combined Groups Results

The total sample of 163 subjects were used in this study. The total sample consisted of 127 females (78%) and 36 males (22%). As these data indicate, each group was composed of a majority of females. The first data set, the CLP 4124 class or the "blackout group" consisted of 93 subjects. The second data set, the SOP 2772 class or the "normal lighting group" consisted of 70 subjects.

Considering the unequal group sizes, the Box's Test of Equality of Covariance Matrices will be interpreted. Box's test is significant, showing a p-value $\leq .000$ and is presented in Table 9.

Table 9

Box's Test of Equality of Covariance Matrices For Combined Groups

Box's M	F	df1	df2	Sig
102.383	4.653	21	52184.913	.000

The Box's test of equality of covariance matrices tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups. Discovering that a significant Box's test was obtained and knowing the groups have unequal N's, the data was re-evaluated in order to authenticate conclusions drawn. To resolve the violation of homogeneity, the N's were reduced to equal groups. The data was analyzed once again with equal groups (N=70). These results duplicated those found in the previous data analysis where the groups were unequal and the Box's test was significant. Because the results of the data were essentially duplicated with the equal groups, it was decided to report the conclusions with the larger N in order to demonstrate the same conclusions yet with the stronger power obtained.

In examining the Pretest Descriptive Statistics, presented in Table 10, it becomes apparent that the blackout group was experiencing more anxiety than the normal lighting group. The blackout group had a higher anxiety mean score (10.0) when compared to the

normal lighting group (7.5). This phenomenon will be discussed in detail in chapter 5 of this dissertation.

Table 10

Pretest Descriptive Statistics Combined Groups

Test	Group	# of Subjects	Mean Anxiety Score
Anxiety Pre Test	1	93	10.0
Anxiety Pre Test	2	70	7.5

The combined groups were examined using the repeated measures analysis of variance (ANOVA). The analysis of variance Within Subjects Contrasts test summary table and Between Subjects test summary table are presented in Table 11 and Table 12 respectively. The results indicate a significant reduction in anxiety across all groups with roughly 16% of the variance explained by the treatments. A significant Main Effect and a significant Between Subjects Effect were obtained. Furthermore, a statistically significant Interaction Effect was found suggesting that the treatments influenced the reduction in anxiety scores $F(7, 155) = 4.063$, $p = .000$ $\eta^2 = .155$. Although a significant Between Subjects Effect was found $F(7,155) = 2.534$, $p = .02$, the Post Hoc tests did not detect a significant difference between groups, indicating the difference between groups is too modest to specify.

Table 11

ANOVA Within-Subjects Contrasts Test Summary Combined Groups

Source Time	df	Mean Square	F	Eta Squared
Time	1	1045.114	118.174**	.433
Interaction	7	35.935	4.063**	.155
Residual (Time)	155	8.844		

Note * p< .05 ** p<.001

Table 12

ANOVA Between-Subjects Effects Test Summary Combined Groups

Source	df	Mean Square	F	Eta Squared
Treatment	7	244.476	2.534*	.103
Error	155			

Note * p< .05 ** p< .001

The Descriptive Statistics presented in Table 13 reveal that the first data collection, the blackout group, responded more strongly to the experimental treatments. The mean anxiety scores in the blackout group dropped a total mean of 9 points compared to a total mean of 5 points from pre to post test. This is likely due to the additional anxiety response of having the lighting failure and is addressed in further detail in the discussion section.

Table 13

Descriptive Statistics Combined Groups

Treatment Group	Pretest Mean	Posttest Mean	S.D. Pre	S.D. Post
Blackout Group				
Control 1	10.8	9.2	9.3	8.7
Music Only 2	11.8	4.3	8.6	4.7
Affs. Only 3	10.3	5.7	6.0	4.9
Affs. + Music 4	7.5	3.6	7.5	5.1
Normal Lighting Group				
Control 5	10.5	9.6	11.2	12.4
Music Only 6	5.3	1.8	4.7	3.0
Affs. Only 7	7.9	4.2	6.4	3.8
Affs. + Music 8	6.8	2.9	6.5	3.1

Summary

The findings of the present study revealed several statistically significant results. Firstly, in the blackout group, the significant Main Effect indicates a statistically significant reduction in anxiety across all groups. A statistically significant Interaction Effect was also found, suggesting that the treatment influenced the reduction in anxiety with an effect size large enough to meet our standards. Secondly, in the normal lighting group, no statistically significant interaction was found, suggesting that the specific treatments did not influence anxiety reduction. However, we find a statistically significant Within–Subjects Main Effect, suggesting that all groups reduced in anxiety scores as a result of a or any treatment. Although a significant Between Subjects Effect

was found, the Post Hoc tests did not detect a significant difference between groups, indicating the difference between groups is too modest to specify. Thirdly, in examining the combined groups, a statistically significant Main Effect and Interaction Effect were found suggesting that the treatments influenced the reduction in anxiety scores with a large effect size. In consulting the Between Subjects Effects presented in Table12, statistical significance was obtained suggesting that the anxiety scores were influenced by the individual treatments to a statistically significant degree. However, the Post Hoc tests did not detect a statistically significant difference between groups, indicating the difference between groups is too modest to specify.

CHAPTER FIVE: CONCLUSIONS, DISCUSSION AND RECOMMENDATIONS

The purpose of this study was to determine if the use of affirmations aids in the reduction of anxiety. In addition, this study examined if the use of affirmations combined with relaxation music aids in the reduction of anxiety and examined if the use of relaxation music alone aids in the reduction of anxiety.

This study investigated the following question:

Is there a difference in the level of self-reported anxiety among individuals who experience an audio tape of affirmations compared to experiencing an audio tape of affirmations combined with relaxation music, compared to experiencing an audio tape of relaxation music alone, to those that do not?

In this study, four group conditions were compared:

1. Experiencing 10 minutes of an audio tape of affirmations.
2. Experiencing 10 minutes of an audio tape of affirmations combined with relaxation music.
3. Experiencing 10 minutes of an audio tape of relaxation music.
4. Control, or no treatment, group.

With this in mind, the following hypotheses are asserted: 1. No statistically significant difference exists in mean anxiety scores based on treatment. 2. No statistically significant difference exists in mean anxiety scores based on time. 3. No statistically significant difference exists in mean anxiety scores based on treatment and time.

This chapter includes a discussion of the research findings, conclusions and recommendations for future research and practice. Before the research questions are discussed, the interesting differences between the two groups or data sets will be re-stated to help answer the research questions more clearly. The study was originally planned to be carried out with the first data set comprising of students in the undergraduate psychology course CLP 4124 one hour before a mid-term exam when anxiety was likely to be present. Due to a lighting problem on the evening of the originally planned study which potentially skewed the data, the study was conducted a second time. The second data set was collected from similar students in the undergraduate psychology course SOP 2772 one hour before a mid-term exam when anxiety was likely to be present. The subjects were chosen at a time when their anxiety was likely to be elevated. The subjects were experiencing the treatments one hour prior to a mid-term examination in their regularly scheduled class.

What is particularly interesting about the results as a whole, is that this study was interested in the treatment's effects on reducing anxiety, and unexpectedly the first group experienced a power outage just as they were about to fill out their first Beck Anxiety Inventory. All four rooms of the experiment, meaning all treatment rooms as well as the control room, lost power and all lighting including emergency lighting. Each room was pitch black, so dark that you were unable to see your hand in front of your face. The power was out for approximately 3 to 5 minutes in all four rooms. The power came back on and remained on for the duration of the study. Although there were no other lighting

disturbances during the study, the possibility of the lighting altering their anxiety rather than the treatment, forced the study to be conducted again. In essence, the study was duplicated with a class that was very similar to the first. In the interest of keeping the subjects as similar as possible in order to compare data sets, subjects were recruited from the same department, who were at approximately the same academic year (juniors) at approximately the same testing time (mid-semester) as the first data set. The second running of the study had no loss of lighting or similar disruptions to skew the data. At the conclusion of collecting both data sets, one data set included subjects who experienced a likely anxiety provoking incident (lighting outage) over and above the testing anxiety, and one data set included subjects who experienced the testing anxiety alone. What remains interesting about the two data sets is that the first data set, with the lighting outage, did in fact experience more anxiety than the second group and allowed the detection of the effect of one of the treatments which would have gone unnoticed had the additional anxiety not been present. Because the lighting outage happened, the anxiety scores were elevated and one of the treatments proved to be potentially effective when a higher anxiety is present. The groups without the lighting outage had less anxiety and showed only moderate indications of the treatments as being effective.

By running a repeated measures analysis of variance (ANOVA) we are able to note a difference in anxiety between the two data sets. The first data collection had a higher baseline anxiety than the second data collection. Furthermore, the first data collection responded more strongly to the experimental treatments as noted in the

descriptive statistics presented in Table 10. It is likely that the lighting failure had an impact on the anxiety of the first group. Consequently, their baseline anxiety scores were higher which enabled the detection of the effectiveness of one of the treatments, the relaxation music only group. Had this lighting incident not happened, there is a possibility that this particular treatment effectiveness would have gone unnoticed. Due to the fact that these students were not experiencing high anxiety, the treatment had little effect. However, because one of the studies inadvertently experienced a lighting outage, which likely caused an increase in anxiety, the effectiveness of one of the treatments was able to be detected. With this lighting outage, it is concluded that when a greater amount of anxiety is present, this treatment may in fact be efficacious. This particular treatment will be discussed in more detail further along in this chapter.

Furthermore, the descriptive statistics indicate modest reductions in anxiety scores across all groups. The instrumentation may be responsible for the inability to detect change in anxiety scores. The BAI is prepared to detect the presence of anxiety symptoms. In this study, the population scored at the extreme low end of anxiety presence. Due to the fact that the subjects had already scored very low, there was little room for their scores to drop further, thus, making it difficult to detect a significant change. Although the treatments did influence the reduction, because the scores were already low, the reduction could only be modest. Perhaps with higher anxiety scores, there would be more room for reduction in anxiety to take place and thus, to be detected.

Discussion of the Research Findings

Research Question 1

Does the use of affirmations aid in the reduction of anxiety?

Findings from the data collection indicate that affirmations do aid in the reduction of anxiety. Overall, anxiety was significantly reduced between pre and post testing between groups (more than the control) however, all reductions between groups were similar indicating that no treatment group was superior to reducing anxiety. According to the data, both groups (blackout and normal lighting) listening to the affirmations alone did drop in anxiety significantly overall but did not stand out as a treatment superior to the others.

The current study tested whether anxiety scores would be reduced to a significant degree after listening to a ten minute audio tape of affirmations statements without relaxation music playing in the background. According to the data sets, both groups, with and without the lighting incident, listening to the affirmations had a modest reduction in anxiety. The average mean reduction in anxiety scores for the groups who experienced the affirmations without relaxation music was approximately four points.. Although the overall Within Subjects Contrasts is significant, telling us there is a difference within the groups, there is a significant change from pretest to posttest, when

consulting the Between Subjects Effects, we see there is no significant difference between the groups. However, when consulting the profile plot, we can see that perhaps if our observed power was stronger, the music only group would be the group that would prove to be effective in treating anxiety. As one can see in observing the profile plot and consulting the descriptive statistics, the relaxation music group was the group that had the greatest reduction in anxiety scores. The average mean anxiety score reduction for the relaxation music group in the blackout group was 8 points compared to approximately 3-4 points for the other treatment groups including the normal lighting group. Keeping in mind, the blackout group had higher anxiety scores which was likely due to the lighting outage. Had the lighting outage not happened, the higher anxiety scores may not have been present, hence we may not have been able to detect the efficacy of the relaxation music. We can then presume that the treatment may be effective with a population that is experiencing elevated levels of anxiety. This argument will be addressed in further detail in the future considerations section of this chapter.

Clinicians who are reporting having success with the use of affirmations for anxiety may actually be benefiting from some other phenomenon rather than the affirmations statements. It can be postulated that because affirmations are a cognitive function, they may be distracting from the relaxation response and actually countering any relaxation experience. When listening to an audio tape of affirmations, one is instructed to repeat phrases, to remain cognitively engaged and conscious of their surroundings. They are instructed to repeat words that others have chosen to bring about

relaxation for the participant rather than self-chosen words or phrases. These components seem to go against what the relaxation response primarily seeks out, which is to become less and less cognitively engaged, to become less conscious of things happening around you, and to listen to the voice within, rather than voices coming from others or from exterior stimuli.

Affirmations may prove to be very beneficial in working through many forms of emotions, including emotional blocks such as grief or loss or working in the building of self esteem. They may also prove to be beneficial in aiding compromised immune system functioning and other physiological processes. However, in the reduction of anxiety, according to this study, affirmations audio tapes do not prove to a superior treatment for anxiety.

Research Question 2

Does the use of affirmations combined with relaxation music have an effect on the reduction of anxiety?

Similar to the affirmations without music, findings from the data collection indicate that affirmations with music do aid in the reduction of anxiety. Overall, anxiety was significantly reduced between pre and post testing between groups (more than the control) however, all reductions between groups were similar indicating that no treatment

group was superior to reducing anxiety. The average mean reduction in anxiety scores for the groups who experienced the affirmations with relaxation music was approximately four points. However, both groups scored relatively equally with respect to the affirmations without relaxation music groups. Although the overall Within Subjects Contrasts is significant, indicating there is a difference within the groups, there is a significant change from pretest to posttest, when consulting the Between Subjects Effects and Post Hoc tests, it is apparent that no significant difference exists between the groups. When consulting the profile plot, we can see that perhaps if our observed power was stronger, the music only group would be the group that would prove to be effective in treating anxiety. It is clear in observing the profile plot and consulting the descriptive statistics, the relaxation music group was the group that had the greatest reduction in anxiety scores. What is exceptionally interesting about this group is that affirmations and guided imagery audio tapes available on the public market routinely include some type of relaxation music played in the background. When this relaxation music is removed, the affirmations do not prove to be as effective in reducing anxiety. Additionally, when the affirmations are played in conjunction with the empirically supported relaxation music, the relaxation music loses its effectiveness to reduce anxiety. It can be presumed that the affirmations are somehow interfering with the ability of the relaxation music, as it has proven to be an effective treatment in reducing anxiety. This is addressed in the discussion of the next research question.

Research Question 3

Does the use of relaxation music alone have an effect on the reduction of anxiety?

Similar to the affirmations alone and with music, findings from the data collection indicate that music alone does aid in the reduction of anxiety and in addition, provide the greatest reduction in anxiety scores. Although the overall Within Subjects Contrasts is significant, indicating there is a difference within the groups, there is a significant change from pretest to posttest, when consulting the Between Subjects Effects and Post Hoc tests, it is apparent that these did not detect a significant difference between groups, indicating the difference between groups is too modest to specify. However, the group that showed the largest reduction in anxiety scores was the group that listened to the relaxation music only. Yet, this was only apparent in the blackout group. The music only group in the blackout conditions had a mean anxiety score reduction of 8 points compared to the other treatment groups which averaged a mean anxiety score reduction of 3 points. The normal lighting music only group had a mean anxiety score reduction of 3 points compared to the other treatment groups which also averaged a mean anxiety score reduction of 3 points. Two important factors are concluded from these data. Firstly, there must be a certain amount of anxiety present in order for the treatment to have an effect. Furthermore, a major difference between this group and the group with the affirmations statements with relaxation music was the absence of the affirmations.

Which leads one to believe that when the affirmations are played in conjunction with the empirically supported relaxation music, the relaxation music loses it's effectiveness to reduce anxiety.

It can be presumed that the affirmations are somehow interfering with relaxation music's effectiveness, as it has been empirically proven to be an effective treatment in reducing anxiety. It can be presumed that the relaxation music was effective in reducing the anxiety scores, however, when the affirmations were played in conjunction with the music, the treatment was not effective to a statistically significant degree. When considering this treatment, it appears that a higher than average level of anxiety needs to be present in order for the music therapy to be effective. This group did respond to the treatment, they did have a higher level of anxiety and it was fortunate that this happened in the study in order to capture the effectiveness of this treatment. Had the blackout not happened, the effectiveness of relaxation music on anxiety reduction may have gone undetected. Additionally, the fact that the subjects scored at the extreme low end of the anxiety scale could have greatly reduced the chances of any of the treatments being detected as effective. In this study, the population scored at the extreme low end of anxiety presence. Due to the fact that the subjects had already scored very low, there was little room for their scores to drop further, thus, making it difficult to detect a significant change. Although the treatments did influence the reduction, because the scores were already low the reduction could only be modest. Perhaps with higher anxiety scores, there would be more room for reduction in anxiety to take place and thus, to be detected.

An additional postulation is that had there been stronger power or a larger subject pool, significance could be detected. Examining the Profile Plot and the Descriptive Statistics Tables, it is clear that a trend is present for the relaxation music only group to continue to reduce in anxiety scores and perhaps more abruptly with stronger power.

Conclusion and Future Considerations

There are several reasons why the affirmations may not be as effective in anxiety reduction. Due to the nature of the affirmations, they may in fact be preventing clients from achieving a state of relaxation. For example, affirmations are a cognitive process which take the listener away from the relaxation state and into a cognitive process where following directions and repeating statement to themselves are at hand rather than the process of attaining a state of complete stillness and relaxation. Affirmations may be distracting from the relaxation response and actually countering any relaxation experience. When listening to an audio tape of affirmations, one is instructed to repeat phrases, to remain cognitively engaged and conscious of their surroundings. They are instructed to repeat words that others have chosen to bring about relaxation for the participant rather than self-chosen words or phrases. These components seem to go against what the relaxation response primarily seeks out, which is to become less and less cognitively engaged, to become less conscious of things happening around you, and to listen to the voice within, rather than voices coming from others or from exterior stimuli.

Affirmations may be very beneficial in working through emotional blocks or emotional pain such as grief or loss, or in the positive development of self-esteem. They may also prove to be beneficial in aiding compromised immune system functioning and other physiological processes. However, using these as a tool to reduce anxiety requires further investigation.

One of the outcomes of this study was that relaxation music is an effective treatment in reducing anxiety when there is a noticeable amount of anxiety present. Future research could be conducted where high anxiety is likely to be present to further determine the effectiveness of these treatments. Treatment duration, practice effects of affirmations could be investigated as well as setting and different populations could be investigated for treatment effects.

In order to strengthen the present study, stronger power would need to be obtained to determine significance of the effects of the treatments. Because this study had a relatively low N where the average group consisted of 20 subjects, future studies could focus on a larger subject pool to determine significance of other treatments and to re-evaluate the relaxation music only treatment.

Additionally, elevated anxiety needs to be present in future studies in order to detect the treatment's effectiveness. This study indicates elevated anxiety is necessary to detect the effectiveness of treatments. Considering different populations where anxiety levels are expected to be high would be an important consideration. Studying the

treatments with subjects who hold different diagnoses of anxiety may prove beneficial in detecting significance of the treatment effects.

Treatment duration is an additional question raised. Perhaps 10 minutes is not sufficient time to engage the relaxation response with these particular treatments. Future studies can manipulate the amount of time subjects experience the treatment. Practice effects may come into consideration in future studies as well. Perhaps subjects will need time for routine training and experience in the use of the affirmations audio tapes much like the practice of biofeedback or progressive relaxation other relaxation techniques that need to be learned rather than happen automatically. The routine and practice of using the tapes or affirmations may prove to have an impact on the ability to reduce anxiety over time.

The setting is one final thought that future researchers may take into consideration. The setting of the experiment may have an impact on the treatment effectiveness. Because the affirmations tapes suggest that the participants close their eyes and ignore their surroundings, this puts the participant in a very vulnerable situation. Those experiencing this for the first time may be reluctant to engage in this due to the resistance to become vulnerable in an unfamiliar environment with strangers present. Providing a safe and familiar setting may also increase the likelihood of subjects experiencing the full impact of the treatment. Keeping in mind however, the setting can play a strong role in the effectiveness which can also go against the generalizability of the

treatment if it continues to be a problem where the treatment cannot be utilized in places where anxiety is likely to occur for the subject.

Due to the prevalence, the distress it causes the sufferers, and the continuing rise of anxiety in our society, any treatment for anxiety that shows the slightest bit of hope for successful treatment should be considered and investigated. Because there is such a strong market of affirmations audio tapes already in existence and in use, continued research to endorse clinician's reports of the effectiveness of this modality should be considered. Not only to further establish their accounts but to also ensure we are treating this disorder sufficiently and bringing relief effectively to those we serve.

APPENDIX A

FLYER RECRUITING SUBJECTS

Dear Students,

Thank you for participating in this research. Your assistance is a great help with this study. Here is a description of what will happen on the day that we meet for a short time before your exam if you choose to participate. If you have any questions, please contact me. I welcome any questions about the study.

Here is a brief description about how things will go when we meet for the study. You will be assigned a number in the order in which you appear on the class roll. This list will be posted outside of class as well as distributed in class. Prior to the study you (your numbers) will be randomly divided into four groups. Each group will meet in a separate room one hour prior to your exam. I will post this list outside of class as well as distribute it in class. At the scheduled time of the study, there will be a graduate assistant in each room to meet you who is helping me with the study. When everyone has arrived you will be asked to sign a consent form and take a short survey (21 questions). The assistant will then ask you to listen to a 10 minute audio tape. Following this you will be asked to take a second 21 question survey. When you are finished with that survey, you are free to go to your regularly scheduled class to take your exam. The study should take approximately 20 minutes to complete. Thanks again for your willingness to participate.

APPENDIX B

FORM LETTER E-MAIL

Dear Students,

Here is an opportunity for you to participate in a research study. If you are interested in participating, please reply to edphd@mail.ucf.edu to find out how to sign up for the study. The following is a short description of the study offered in your class, SOP 2772. If you have any questions, please contact me. I welcome any questions about the study.

Here is a brief description about how things will go when we meet for the study. You will be assigned a number in the order in which you appear on the class roll. This list will be posted outside of class as well as distributed in class. Prior to the study you (your numbers) will be randomly divided into four groups. Each group will meet in a separate room one hour prior to your exam. I will post this list outside of class as well as distribute it in class. At the scheduled time of the study, there will be a graduate assistant in each room to meet you who is helping me with the study. When everyone has arrived you will be asked to sign a consent form and take a short survey (21 questions). The assistant will then ask you to listen to a 10 minute audio tape. Following this you will be asked to take a second 21 question survey. When you are finished with that survey, you are free to go to your regularly scheduled class to take your exam. The study should take approximately 20 minutes to complete. Thanks again for your willingness to participate.

Christine Karper

Ph.D. Candidate
College of Education

APPENDIX C

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

University of Central Florida

Office of Research

September 11, 2002

Christine Karper
Department of Child, Family & Community Sciences
College of Education
University of Central Florida
Orlando, Florida 32816

Dear Ms. Karper:

With reference to your protocol entitled, "The Efficacy of Affirmation in Anxiety Reduction," I am enclosing for your records the approved, executed document of the UCFIRB Form you had submitted to our office.

Please be advised that this approval is given for one year. Should there be any addendums or administrative changes to the already approved protocol, they must also be submitted to the Board. Changes should not be initiated until written IRB approval is received. Adverse events should be reported to the IRB as they occur. Further, should there be a need to extend this protocol, a renewal form must be submitted for approval at least one month prior to the anniversary date of the most recent approval and is the responsibility of the investigator (UCF).

Should you have any questions, please do not hesitate to call me at 823-2901.

Please accept our best wishes for the success of your endeavors.

Cordially,

Chris Grayson
Institutional Review Board (IRB)

Copies: Dr. E.H. Robinson, III
IRB File

Office of Research
12443 Research Parkway Suite 207 • Orlando, FL 32826-3252
407-823-3778 • FAX 407-823-3299

APPENDIX D

BECK ANXIETY INVENTORY

BAI

NAME:_____

Date of Birth:_____ Sex:_____ Date:_____

Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by each symptom during the PAST WEEK, INCLUDING TODAY, by darkening the corresponding circle in the column next to each symptom.

	NOT AT ALL	MILDLY	MODERATELY	SEVERLY
1. Numbness or tingling.	O	O	O	O
2. Feeling hot.	O	O	O	O
3. Wobbliness in legs.	O	O	O	O
4. Unable to relax.	O	O	O	O
5. Fear of the worst happening.	O	O	O	O
6. Dizzy or lightheaded.	O	O	O	O
7. Head pounding or racing.	O	O	O	O
8. Unsteady.	O	O	O	O
9. Terrified.	O	O	O	O
10. Nervous.	O	O	O	O
11. Feelings of choking.	O	O	O	O
12. Hands trembling.	O	O	O	O
13. Shaky.	O	O	O	O
14. Fear of losing control.	O	O	O	O
15. Difficulty breathing.	O	O	O	O
16. Fear of dying.	O	O	O	O
17. Scared.	O	O	O	O
18. Indigestion or discomfort in abdomen.	O	O	O	O
19. Faint.	O	O	O	O
20. Face Flushed.	O	O	O	O
21. Sweating (not due to heat).	O	O	O	O

APPENDIX E

GRADUATE ASSISTANT SCRIPT

Your script-

A close as you can keep to this so all students get the same instructions.
When they come in- try not to interact with them much. When it looks like most are there,

Say; "Ok, we can get started. First I need to remind you that this is a voluntary study you are free to stop participating without penalty at any time. On your desk, you have an informed consent and two anxiety surveys. Please read and sign the consent form and pass it forward. - Then, Please put your name on the first survey, along with the other information at the top, date of birth, gender, and also put **Beck #1**."

Say again- - Please put your name on it, along with the other information at the top, date of birth, gender, and also put **Beck #1**. **You do not have to fill out the back page section where it says office use only. Please fill it out as you are feeling **right now.**
Collect after 4-5 minutes or so--- When it's collected,

Say; "Ok, now, please listen to the tape. **Please do not look at or fill out the second survey **until the tape is finished.**" **this is important to the study that you wait until the tape is over.

Say; "Please sit and listen quietly without doing any other activity such as writing or reading. --This is only ten minutes so please just sit and listen to the tape. The tape will have instructions in the first few minutes."

*(Music only group- do not refer to tape having instructions)

Play the tape for ten minutes. When the tape is finished,

Say; "You have your second survey on your desk.- Please put your name on it, along with the other information at the top, date of birth, gender, and also put **Beck #2."**

Say again-; "Please put your name on it, along with the other information at the top, date of birth, gender, and also put **Beck #2**. You do not have to fill out the back page section where it says office use only."

When they are done- collect the Becks, and they are free to go to their class.

APPENDIX F

HEALTH JOURNEYS AFFIRMATIONS STATEMENTS

I know that when I stay connected to my body, when I am truly conscious of how it feels, I allow myself to be peaceful, calm and well.

I know that when I can live in the present, taking pleasure in the beauty and aliveness of each moment, I allow myself to be peaceful, calm and well.

I know that the more I can acknowledge and accept my feelings without criticism or blame, the more I allow myself to be peaceful, calm and well.

I know that the more I can clear my mind and set aside needless worry, the more I allow myself to be peaceful, calm and well.

More and more I can let go of worrying about things I cannot control and focus on my own inner peacefulness.

More and more I am in touch with the peaceful stillness at my center, soft, and balanced, and steady.

I know that when I can soften and let go of harsh expectations and unrealistic demands on myself and others, I allow myself to be peaceful, calm and well.

I know that when I can forgive myself and others of errors of the past, I allow myself to be peaceful, calm and well.

More and more I see that when I can love and appreciate myself, and take time to care for myself, I am giving my body a powerful message to be calm and well.

I call upon my intention to bring more calm and well being into my life and I engage my powerful will to help me with this.

More and more, I can notice when muscles tense and tighten in my body and I can soften and release them with my awareness and my breathing.

More and more, I can soften and relax tension in my scalp, face, neck and shoulders.

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